Remote Sensing Applications Division (RSAD)

CDR Program Office

Weekly Report for Nov 9, 2012
Ed Kearns, Acting Chief

CDR Program Office
FY13 Climate Data Records

Weekly Report – Nov 9, 2012

① **Mean Layer Temperatures – Remote Sensing Systems (RSS)**
- PI working on documenting code (80%)

② **Vegetation**
- PI responded to SOW – awaiting funding

③ **PERSIANN**
- SOW sent to PI, PI submitted proposal to CICS
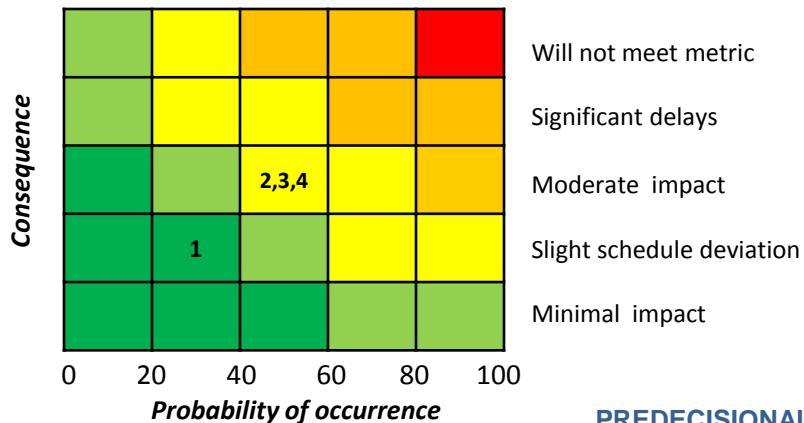
④ **ISCCP**
- SOW agreed upon by PI - awaiting funding

● No change   ↑ Increasing Risk   ↓ Decreasing Risk   *Candidate CDRs

FY13 CDRs	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Mean Layer Temps - RSS												
Vegetation Bundle												
Cryosphere Bundle												
Solar Irradiance Bundle												
PERSIANN												
Atmos Temp Bundle						TBD						
Cloud Moisture Bundle												
Ocean Surface Bundle												
MSU/AMSU Temp Suite												
ISCCP												

R2O PHASE: ASSESSMENT   SUBMISSION PREP   TRANSFER   VERIFY   ARCHIVE   ACCESS

Risk Matrix

Consequence (y-axis, top to bottom):
- Will not meet metric
- Significant delays
- Moderate impact → 2,3,4
- Slight schedule deviation → 1
- Minimal impact

Probability of occurrence (x-axis): 0 20 40 60 80 100

Risk - Mitigation

- **Lots of CDRs to assess and transition**
  - **Need dedicated resources from each Branch**

- **No formal QA on product, software, and documentation process**
  - **IPT reviews and ORR checklist helps alleviate some of risk**
  - **Need to formally document the current QC steps being done**

● = On-track   ● = Potential management action required   ● = Management attention required

Backup FY12 CDR - Mean Layer Temperature - RSS

CDR Product: TCDR – Atmospheric Temperature at Four Layers, 1978-2011 (140 MB)
GEOSS Societal Benefit: Energy, Climate, Ecosystems

Project Status

- **Held IPT meeting**
  - **PI said all code should be done by 11/20**
  - **Provided some more CF edits to the metadata**
- PI sent final draft of C-ATBD, looks good
- PI sent all 5 flow charts of process
  - 4 of 5 sets of accompanying code is complete
- SA available on Google docs for final review

NCDC SOW developed for:
1) Monthly updates for one year
2) QC tools and training

Next Action/Milestone

- PI send updated draft C-ATBD (8/20) - done
- Send last set of documented code and flow chart (11/20) - 4 of 5
- Archive all parts (11/30)

(G)   ## Project Risks

- Funding (SDS 2008)
  - Proposal submitted thru CICS back in May;
  - funding available to PI in Oct.

ID	Task Name	Status	Start	Stop	FY12 Q4			FY13 Q1			FY13 Q2			FY13 Q3		
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Initial Assessment	100	10/17/2011	2/3/2012												
2	Transfer Prep	85	2/6/2012	11/14/2012												
2a	Comment Source Code	80	2/6/2012	11/14/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	90	3/19/2012	10/7/2012												
2c	Create NetCDF Dataset	90	5/3/2012	10/31/2012												
3	Tranfer Code, Docs, and Data	25	4/18/2012	11/21/2012												
4	Verify Code, Docs, and Data	25	4/19/2012	11/30/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	12/7/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	12/15/2012												

PREDECISIONAL DRAFT INFORMATION

PI: Mears (RSS, SDS 2008)   RSAD TM: Dongsoo Kim

FY13 CDR Assessment Process

1) **Terry - notify (email) each PI that they are a FY13 CDR transition candidate (10/29) - done**

2) **Branch Chiefs - confirm IPT members are correct on google docs; edit as necessary (10/22) - done**

3) **Dan/Candace - set up IPT emails and send initial contact to PIs and rest of team, describe expectations, and request information for initial assessments (10/31) – done**
   - **Sent emails to all PIs (10/31) asking for assessment items; SMEs followed up (11/7)**
   - **Set up group IPT emails (11/5)**
   - **Held CDR Kickoff meeting (11/7)**
     - **-- discussed reasoning for surge, roles/responsibilities, answered individual questions**

4) **SMEs - use CDRP assessment report and briefing templates to conduct initial assessments (staggered timeline)**
   - **Sent SMEs assessment template and sample presentation (11/5)**

5) **CDRP - make decision on whether to proceed with transition or not based on assessment presentation and discussions.**
   - **Goal: get first 6 assessments done by Dec 1**
     - **-- Scheduling is difficult, should present one at each Thursday CDR meeting**

Early Assessment Info

1)   Pilewski – email from PI (11/7), PI and Tom included Jeff and Jesse on email responses

Hi Tom,

I think we need some discussion of how to approach this; that's why I've cc'd Jesse and Jeff on this message. You may or may not know that the TSIS mission has been delayed, at least until 2016. For that reason we cannot provide either of items 1) *sample code* or 2) *sample data* on the list. Perhaps we can provide some portions of these using SORCE algorithms, for the TIM (Total Irradiance Monitor) and SIM (Spectral Irradiance Monitor). If you think that is satisfactory we can get you some answers soon for many of the items in your question. I think we also require additional discussion on the requirements for the C-ATBD versus an ATBD - the latter is what we proposed to do. Our ATBD is specifically for the creation of a TSIS CDR and thus does not meet all of the attributes of a C-ATBD.
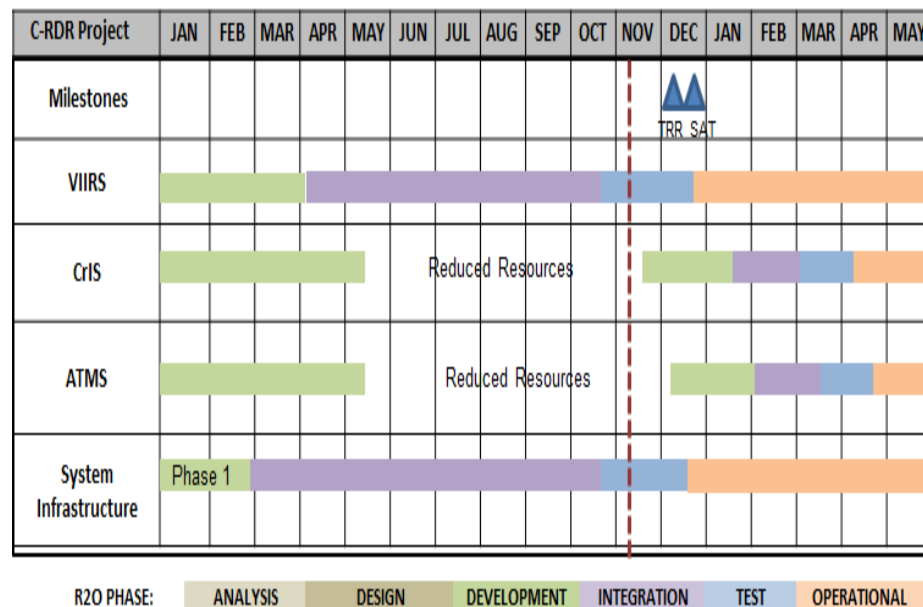
Thanks,
Peter
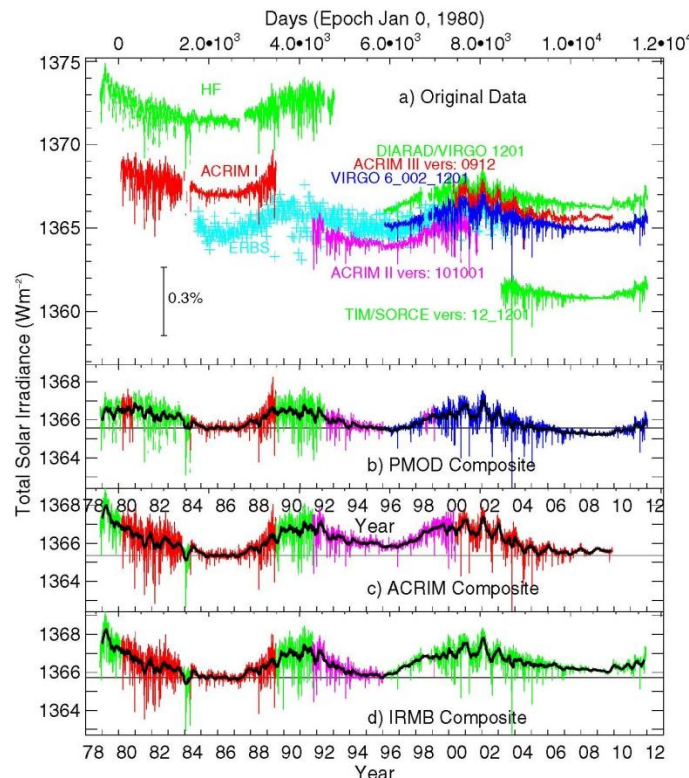
SCHEDULE OF DELIVERABLES - CDRP 2012 O&M Contracts and Grants

			Item Received	Approved	IP/License
NOAA/STAR - PI: A. Heidinger - $50,000 - Period of Performance: 7/01/2012 - 6/30/2013					**N/A**
ITE	DESCRIPTION	DUE DATE			
1	Implementation plan	DUE 08/01/2012	√		8/16/2012
2	Daily updates	Within 7 days of the observation date			**Not delivering**
3	CDR quality assurance software tools	Initial delivery 09/01/2012			
UM (CICS-NC) - PI: B. Evans - $60,090 (issued 8/23/12) - Period of Performance: 7/01/2012 - 6/30/2013					**NO**
ITE	DESCRIPTION	DUE DATE			
1	Implementation plan	DUE 9/23/2012	√	Pending	9/12/2012
	Main Update	January 2011 until the last update period prior to the demise of NOAA-18 AVHRR (approximately mid-2011)			
2	Monthly updates	10th day of the succeeding month			
3	CDR quality assurance software tools	Initial delivery 10/23/2012	?		
Rutgers - PI: D. Robinson - $50,000 - Period of Performance: 9/11/2012 - 9/10/2013					**YES**
ITE	DESCRIPTION	DUE DATE			
1	Implementation plan	DUE 10/11/2012	√	Pending	10/11/2012
2	Monthly updates	5th day of the succeeding month	√	Archive	
3	CDR quality assurance software tools	Initial delivery 11/10/2012			
UAH - PI: J.Christy - $40,112 - Period of Performance: 9/15/2012 - 9/14/2013					**YES**
ITE	DESCRIPTION	DUE DATE			
1	Implementation plan	DUE 10/15/2012	√	Pending	
2	CDR superseding Version 5.4	To be coordinated between Contractor and CDRP			
3	Monthly updates	8th day of the succeeding month			**Delivering to CMB**
4	CDR quality assurance software tools	Initial delivery 12/15/2012			
				RECEIVED	
				DEADLINE APPROACHING	
				OVER DUE	

SCHEDULE OF DELIVERABLES - CDRP 2012 O&M Contracts and Grants

ITE	DESCRIPTION	DUE DATE	Item Received	Approved	IP/License
UCAR - PI: B. Ho - $50,000 - Period of Performance: 9/17/2012 - 9/16/2013					**YES**
1	Implementation plan	DUE 10/17/2012	√	Pending	11/5/2012
2	CDR that includes AMSU Channels 7 & 9	To be coordinated between contractor and CDRP			
3	Quarterly updates	10th day of the month following the end of each Quarter			
4	CDR quality assurance software tool(s)	Initial delivery (12/17/2012)			
RSS (CICS-NC) - PI: C. Mears - Period of Performance: 9/15/2012 - 9/14/2013					**YES**
1	Implementation plan	No later than October 15, 2012	√	Pending	10/30/2012
2	Monthly updates	8th day of the succeeding month beginning October 8, 2012	(OVER DUE)		**Delivering to CMB**
3	CDR quality assurance software tools	Initial delivery no later than December 15, 2012			
RSS (CICS-NC) - PI: F. Wentz -Period of Performance: 9/15/2012 - 9/14/2013					**YES**
1	Implementation plan	DUE 11/01/2012	√	Pending	11/6/2012
2	CDR superseding Version 6	To be coordinated between Contractor and CDRP			
3	Monthly updates	10th day of the succeeding month	(OVER DUE)		
4	CDR quality assurance software tools	Initial delivery 12/01/2012			
University of Colorado - PI: W. Meier - $124,971 - Period of Performance: 10/01/2012 - 9/30/2013					**YES**
1	Implementation plan	DUE 11/01/2012	√	Pending	11/1/2012
2	Update the source code to include processing of the F17 SSMIS data	March 31, 2013			
3	Quarterly updates	Delivery within 30 days of each RSS data delivery			
4	CDR quality assurance software tools	Initial delivery 12/01/2012			
5	Tally of cumulative number of CDR data downloads to public	10th day following the end of each quarter of the calendar year			

(green)	RECEIVED	
(yellow)	DEADLINE APPROACHING	
(red)	OVER DUE	

Weekly Report – November 9, 2012

① VIIRS
- Integrating with the system infrastructure.

② CrIS
- Postponed.

③ ATMS
- Postponed.

④ System Infrastructure
- Integrating with the VIIRS C-RDR.

- **Will deliver initial version with ADL 3.1.**
- **Integrating: Ingest data from CLASS and producing C-RDRs.**
- **Need to verify the C-RDRs for correctness.**
- Validated post-launch auxiliary files in C-RDR format.
- Successfully created VIIRS C-RDR.

C-RDR Project	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Milestones												TRR SAT					
VIIRS																	
CrIS					Reduced Resources												
ATMS					Reduced Resources												
System Infrastructure	Phase 1																

R2O PHASE: ANALYSIS DESIGN DEVELOPMENT INTEGRATION TEST OPERATIONAL

Risk Matrix

					Will not meet metric
					Significant delays
		1,4		2,3	Moderate Impact
					Slight sched deviation
					Minimal Impact

Consequence

0   20   40   60   80   100

Probability of occurrence

Risk and Mitigation

VIIRS, CrIS, ATMS –
- Resources are being reduced. Delivery of CrIS and ATMS will be delayed.
- Operational software is under maintenance, updated versions may affect C-RDR ported version.

System Infrastructure –
Reliability of NPP RDRs from CLASS. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
- Ability of CLASS to handle the frequency and volume of NPP data. CLASS has been successful during system tests.
- Archive in CLASS is currently cost prohibitive. Need to identify alternate archive. Plan to store C-RDRs on HPSS until migration to CLASS.

PREDECISIONAL DRAFT INFORMATION

= On-track   = Potential management action required   = Management attention required

Visible Infrared Imaging Radiometer Suite (VIIRS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Working to create the Verified RDR from the C-RDR.**
- **Continued work on code for validation of C-RDRs against SDRs.**
- Helping define common metadata model for CLASS.
- Completed Draft VIIRS C-RDR Product Specification.
- Temporarily working on snow cover CDR for IOC.
- Generated an image from a VIIRS C-RDR.
- Successfully ran VIIRS data from CLASS through C-RDR packer.
- Completed dynamic C-RDR file-level metadata code.
- Implemented and verified netCDF compression.
- Verifying (IDPS) documentation and code changes with DEWG.
- Completed writing science and spacecraft diary data.
- Completed test of code that writes VIIRS Support Data.

Next Action / Milestone

- Integrating the VIIRS C-RDR software and the system infrastructure.

(Y)

Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Analysis	Completed	10/23/2009	5/4/2010												
2	Design	Completed	5/6/2010	1/5/2011												
3	Development	95.00%	1/6/2011	1/30/2012	██	██	██	██								
3a	Develop VIIRS processing component	95.00%	1/6/2011	1/12/2012	██	██	██									
3b	Test VIIRS processing component	95.00%	12/28/2011	1/30/2012				██								
4	Integration	10.00%	1/31/2012	3/26/2012						██						
5	Test		3/23/2012	4/12/2012							██					
5a	Dry Runs		3/23/2012	4/11/2012							██					
5b	System Acceptance Test		4/12/2012	4/12/2012							██					
6	Operational		4/13/2012									██	██	██	██	██

Being Reworked

POC: Biard

C-RDR System Infrastructure

C-RDR Product: Infrastructure to automate the production of the C-RDRs.
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Investigating processing errors, both C-RDR and ADL. Have processed ~13,000 files. Have fixed C-RDR code errors that caused crashes.**
- Refining selection criteria when multiple RDRs are received.
- Consistently processing C-RDRs using staged ingest data from CLASS.
- Completed validation of post-launch auxiliary files in C-RDR format.
- Using ADL 4.0 code to create required metadata for auxiliary files.
- Investigating missing metadata for auxiliary data from CLASS.
- Modified supporting data software for auxiliary data changes.
- Created initial VIIRS C-RDR from CLASS mission data.
- Development environment is set up on the CICS network.
- Working on managing queues and processing jobs.
- Locating, validating, and statusing files for processing.
- Developing code for ingest detection and processing.

Next Action / Milestone

- Integrating and testing the system infrastructure.

(Y)

Project Risks

- Need to develop an automated re-request mechanism for CLASS.

Project Schedule

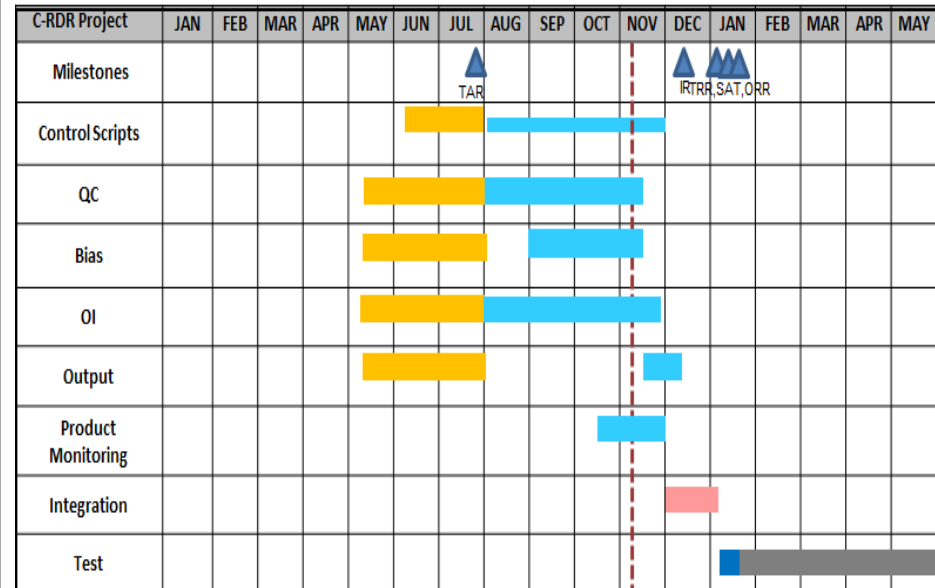| ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Analysis	Completed	9/29/2010	4/22/2011												
2	Design	90.00%	4/25/2011	7/8/2011												
3	Development	80.00%	5/31/2011	2/28/2012												
3a	Develop infrastructure	90.00%	5/31/2011	2/14/2012												
3b	Test infrastructure	70.00%	9/27/2011	2/28/2012				Being Reworked								
4	Integration (Phase 2)	5.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

POC: Copley

Weekly Report – November 9, 2012

1 **OISST – Optimum Interpolated Sea Surface Temperature**
- **Implementing common logger calls and removing GoTos.**
- **Conducting code review for buoyship QC.**
- **Refactoring code (Bias, QC, OI).**
- Integrated a common logging utility and identified log levels.
- Investigating the use of SPEC for product monitoring.
- Conducted code review, refactor and unit test of ship_bias.f90.
- Evaluating validity/duplicates in compile options & static analysis.
- Defined list of tasks for refactoring of each component.
- Developing tests (functional & component) to verify code.
- Completed testing of static analysis and complexity tools.
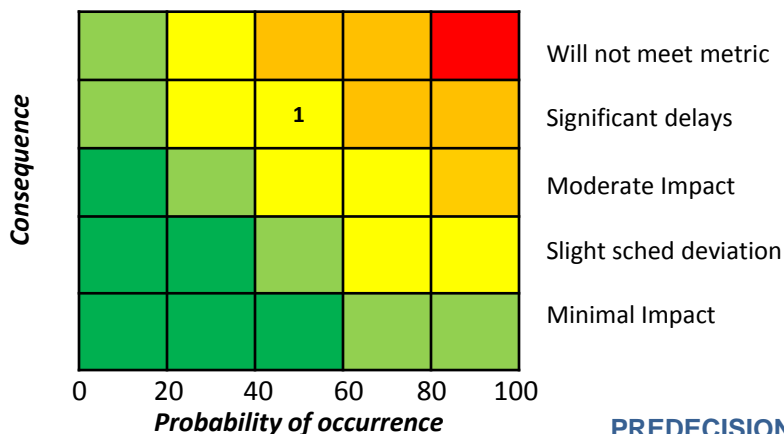- Conducted Technology Assessment Review July 25.

Operations:
- Updated and tested scripts to handle new sea ice data format.

C-RDR Project	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Milestones							TAR						IRTRR,SAT,ORR				
Control Scripts																	
QC																	
Bias																	
OI																	
Output																	
Product Monitoring																	
Integration																	
Test																	

R2O PHASE: ANALYSIS | DESIGN | DEVELOPMENT | INTEGRATION | TEST | OPERATIONAL

Risk Matrix

Consequence (vertical axis): Will not meet metric, Significant delays, Moderate Impact, Slight sched deviation, Minimal Impact

Probability of occurrence (horizontal axis): 0, 20, 40, 60, 80, 100

(Risk "1" plotted at Significant delays / ~50 probability)

Risk and Mitigation

Resource availability for performing the transition.

Configuration Management (CM) process not defined for operations.

No Quality Assurance team available.

Modifying existing software for internal software changes. Product output must remain unchanged for users.

Common infrastructure for operations is not fully defined.

OISST processing will be on a 64 bit architecture.

PREDECISIONAL DRAFT INFORMATION

= On-track   = Potential management action required   = Management attention required

Weekly Report – November 9, 2012

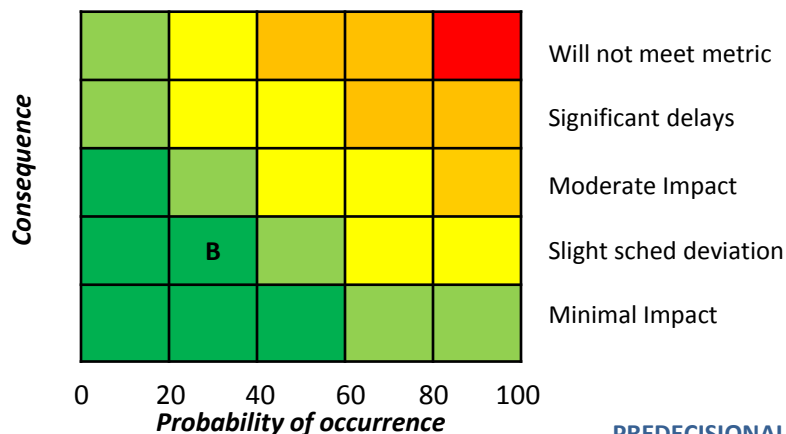**A. FY12 Final Report – Milestone Complete**
- GST final report for FY12 was published in the CDR Program Library last Friday.

B. IOC to FOC / Software Rejuvenation Decision Support
- Completed spreadsheet containing software size and complexity measures for the 11 CDRs at IOC, plus the OISST operational version being run at NCDC. To be published in CDRP Library.
- Started defining an objective decision-making process for selecting the best candidates for IOC to FOC and software rejuvenation in FY13 and beyond. Will use above measurements and the draft evaluation criteria recommended in the FY12 report, and include steps to assure stakeholder representation and consensus development. Guided by CMMI specific and generic practices for Decision Analysis and Resolution.

FY 12 3.1 & 3.2		Fe	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Develop White Paper			✔					
3	Establish Dev Environment			✔					
4	Build and Test Infrastructure								
5,6	Familiarization & Diagnostics								✔
7,8	Develop & Run Algorithm Test								
9	Derive / Document Architecture								
10	Identify Probs & Opportunities								
11	Prioritize Probs & Opportunities								

FY 12 Report is Complete

Risk Matrix

Consequence (vertical axis):
- Will not meet metric
- Significant delays
- Moderate Impact
- Slight sched deviation
- Minimal Impact

Probability of occurrence (horizontal axis): 0, 20, 40, 60, 80, 100

Top Risks and Mitigation

R3. Ongoing parallel development by PI
- Mitigation: Use good differencing tools. Incorporate only those changes that have a good justification from the CDR perspective.

R8. Personnel on task at maximum work load
- With recent budget cuts to the CDRP the personnel still engaged on this task are at maximum work level. More budget challenges could result in the loss of the remaining key personnel and jeopardize the completion of this task.

R10. No sustainable commitment for independent Quality Assurance
- QA will be performed by team. Risk is that this work will not be performed as well as it would be by an experienced, independent QA expert.

R13. PI Availability
- Travel to Wisconsin early FY13 for face to face meeting.

PREDECISIONAL DRAFT INFORMATION